



# Dvirka and Bartilucci

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September 17, 2010

K. Kelly Morris, Executive Director  
Glen Cove Community Development Agency  
City Hall  
9 Glen Street  
Glen Cove, NY 11542

Re: Sampling and Analysis Plan/  
Quality Assurance Protection Plan- Update  
Doxey's Property  
10 Garvies Point Road  
Glen Cove, New York

Dear Ms. Morris

As requested Dvirka and Bartilucci Consulting Engineers (D&B) is pleased to submit to the Glen Cove Community Development Agency (CDA) this updated Sampling Analysis Plan (SAP)/Quality Assurance Protection Plan (QAPP) for the Pre-Design Investigation to be conducted at the Doxey's Property located at 10 Garvies Point Road Glen Cove, New York, (hereafter referred to as the "Site").

The pre-design investigation for the Site was described in the Technical Scope of Work (SOW) dated September 8, 2010 which was submitted to the CDA. As indicated in the SOW the pre-design investigation will be conducted in accordance with the following documents that have been prepared by D&B for the City of Glen Cove:

- Draft Remedial Design Work Plan dated June 2010;
- Quality Assurance Project Plan (QAPP) for Brownfield Investigations dated January 1998; and
- Sampling and Analysis Plan for the Doxey's Property dated June 1999.

The purpose of this SAP/QAPP-Update is to detail any changes to the documents listed above based on the current sample collection and analytical procedures. The only changes to the documents that are required relate to the QAPP since the sample analysis methods and quality control requirements have been updated since the January 1998 QAPP. For the pre-design investigation at the Site the analytical protocols and quality assurance/quality control (QA/QC) requirements

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that will be followed are those listed in the July 2005 New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP), the United States Environmental Protection Agency (USEPA) 10/04 SOW and NYSDEC Division of Environmental Remediation (DER-10)/Technical Guidance for Site Investigation and Remediation.

The section of the QAPP that requires modification is 3.2 Data Quality Requirements and Assessments.

Data quality requirements and assessments are provided in the 2005 NYSDEC ASP, which include the detection limit for each parameter and sample matrix. Note that quantification limits, estimated accuracy, accuracy protocol, estimated precision and precision protocol are determined by the laboratory and will be in conformance with the requirements of the 2005 NYSDEC ASP and or USEPA 10/04 SOW, where applicable. Table 1, attached, presents a summary of the revised data quality requirements.

As described in the SOW a total of 18 soil borings will be advanced with a total of 72 soil samples being collected. Table 2 presents a summary of the parameters/sample fraction to be analyzed together with the sample location, type of sample container, method of sample preservation, holding time and analytical method. Category B deliverables are required for all analytical results.

Sample collection will be conducted in accordance with the procedures described in Section 6.0 of the 1998 QAPP.

Data obtained during the pre-design investigation will be compared to specific Standards, Criteria and Guidelines (SCGs). The SCGs to be utilized will be the 6 NYCRR Part 375-6 Restricted Residential Use Soil Cleanup Objectives (SCOs) and Supplemental SCOs which became effective in December 2006, and the Commissioner Policy on Soil Cleanup Guidance (CP-Soil).

If you have any questions or require additional information please don't hesitate to give me a call at (516) 367-9890, Ext. 3064.

Very truly yours,



Frank DeVita  
Associate

FD/RAP(t)/j

cc: P. Mize (CDA)  
E. Reilley (CDA)  
J. Tsolisos (USEPA)  
P. Clappin (USEPA)

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**Table 1**  
**DOXEY'S PROPERTY**  
**PRE-DESIGN INVESTIGATION**  
**DATA QUALITY REQUIREMENTS**  
**OBJECTIVES FOR PRECISION AND ACCURACY**

<u>Parameter</u>	<u>Sample Matrix</u>	<u>CRDL*</u>	<u>Estimated Accuracy</u>	<u>Accuracy Protocol**</u>	<u>Estimated Precision</u>	<u>Precision Protocol**</u>
Volatile Organics	Liquid Solid	5-10 ug/l 5-10 ug/kg	0.87 – 2.48 ug/l	Vol. IB, Chapter 4, Method 8260b, Table 7	0.11 – 4.00 ug/l	Vol. IB, Chapter 4, Method 8260b, Table 7
Base Neutrals	Liquid Solid	10-50 ug/l 330-1,600 ug/kg	0.29 – 1.23 ug/l	Vol. IB, Chapter 4, Method 8270c, Table 7	0.13 – 1.05 ug/l	Vol. IB, Chapter 4, Method 8270c, Table 7
Acid Extractables	Liquid Solid	10-50 ug/l 330-1,600 ug/kg	0.29 – 1.23 ug/l	Vol. IB, Chapter 4, Method 8270c, Table 7	0.13 – 1.055 ug/l	Vol. IB, Chapter 4, Method 8270c, Table 7
PCBs	Liquid Solid	0.5-1.0 ug/l 8.0-160 ug/kg	0.69 – 10.79 ug/l	Vol. IB, Chapter 4, Method 8082, Table 4	0.16 – 3.50 ug/l	Vol. IB, Chapter 4, Method 8082, Table 4
Metals	Liquid Solid	0.2-5,000 ug/l 0.2-5,000 ug/kg	--	Vol. IA, Chapter 3, Method 6010b and SW-846 Methods for: Mercury 7470a-Liquid, 7471a-Solid, Table 4	--	Vol. IA, Chapter 3, Method 6010b and SW- 846 Methods for: Mercury 7470a-Liquid, 7471a-Solid, Table 4

\*Contract Required Detection Limits.

\*\*Ref. NYSDEC 7/05 ASP.

**Table 1 (continued)**

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
DATA QUALITY REQUIREMENTS  
OBJECTIVES FOR PRECISION AND ACCURACY**

<u>Matrix/Parameter</u>	<u>Precision %</u>	<u>Accuracy %</u>
<u>Soil</u>		
VOCs <sup>(a)</sup>	See Table 1a	See Table 1a
Extractables <sup>(a)</sup>	See Table 1b	See Table 1b
PCBs <sup>(a)</sup>	See Table 1c	See Table 1c
Metals <sup>(b)/(c)</sup>	±35*	75–125*

Notes:

- (a) Accuracy will be determined as percent recovery of surrogate spike compounds and matrix spike compounds. Surrogate and matrix spike compounds for VOCs, extractables, and PCBs are listed in Tables 1a, 1b and 1c, respectively. Precision will be estimated as the relative standard deviation of the percent recoveries per matrix.
- (b) Accuracy will be determined as percent recovery of matrix spikes when appropriate or the percent recovery of a QC sample if spiking is inappropriate. Precision will be determined as relative percent difference of matrix spike duplicate samples, or duplicate samples if spiking is inappropriate.
- (c) Precision will be determined as the average percent difference for replicate samples. Accuracy will be determined as the percent recovery of matrix spike samples or laboratory control samples, as appropriate.

\* As per USEPA CLP Inorganic National Functional Guidelines (10/2004)

Source: NYSDEC ASP

**Table 1a**  
**DOXEY'S PROPERTY**  
**PRE-DESIGN INVESTIGATION**  
**DATA QUALITY REQUIREMENTS**  
**ACCURACY AND PRECISION REQUIREMENTS FOR VOCs**

<u>Surrogate Compound</u>	<u>Low/Medium Soil</u>	
	<u>Spike Recovery Limits (%)</u>	<u>Precision %</u>
Toluene-d8	84 – 138	--
4-Bromofluorobenzene	59 – 113	--
1,2-Dichloroethane-d4	70 – 121	--
<u>Matrix Spike Compound</u>		
1,1-Dichloroethene	59 – 172	≤ 22
Trichloroethane	62 – 137	≤ 24
Chlorobenzene	60 – 133	≤ 21
Toluene	59 – 139	≤ 21
Benzene	66 – 142	≤ 21

Source: NYSDEC ASP

**Table 1b**  
**DOXEY'S PROPERTY**  
**PRE-DESIGN INVESTIGATION**  
**DATA QUALITY REQUIREMENTS**  
**OBJECTIVES FOR PRECISION AND ACCURACY OF EXTRACTABLE COMPOUNDS**  
**BASED UPON RECOVERY OF SURROGATE AND MATRIX SPIKE COMPOUNDS\***

<u>Surrogate Compound</u>	<u>Soil</u>	
	<u>Accuracy %</u>	<u>Precision %</u>
Nitrobenzene-d <sub>5</sub>	23 – 120	--
2-Fluorobiphenyl	30 – 115	--
Terphenyl-d <sub>14</sub>	18 – 137	--
Phenol-d <sub>5</sub>	24 – 113	--
2-Fluorophenol	25 – 121	--
2,4,6-Tribromophenol	19 – 122	--
2-Chlorophenol-d <sub>4</sub>	20 – 130	--
1,2-Dichlorobenzene-d <sub>4</sub>	20 – 130	--
<u>Matrix Spike Compound</u>		
Phenol	26 – 90	≤ 35
2-Chlorophenol	25 – 102	≤ 50
1,4-Dichlorobenzene	28 – 104	≤ 25
N-Nitroso-di-n-propylamine	41 – 126	≤ 38
1,2,4-Trichlorobenzene	38 – 107	≤ 25
4-Chloro-3-methylphenol	26 – 103	≤ 33
Acenaphthene	31 – 137	≤ 19
4-Nitrophenol	11 – 114	≤ 50
2,4-Dinitrotoluene	28 – 89	≤ 47
Pentachlorophenol	17 – 109	≤ 47
Pyrene	35 – 142	≤ 36

\*Accuracy will be determined as percent recovery of these compounds. Precision will be estimated as the relative standard deviation of the percent recoveries per matrix.

Source: NYSDEC ASP

**Table 1c**  
**DOXEY'S PROPERTY**  
**PRE-DESIGN INVESTIGATION**  
**DATA QUALITY REQUIREMENTS**  
**ADVISORY RECOVERY LIMITS**  
**SURROGATE AND MATRIX SPIKE COMPOUNDS**  
**FOR PCBs\***

<u>Surrogate Compound</u>	<u>Soil</u>	
	<u>Advisory Recovery Limits (%)</u>	<u>Precision %</u>
Decachlorobiphenyl	30 – 150	--
Tetrachloro-m-xylene	30 – 150	--
<u>Matrix Spike Compound</u>		
Aroclor 1015 mix	29 – 135	≤ 15
Aroclor 1260 mix	29 - 135	≤ 20

\*Samples do not have to be reanalyzed if these recovery limits are not met.

Source: NYSDEC ASP

**Table 2**

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
Boring Location	Grab	Subsurface Soil	Volatile Organics	8	Glass, clear/ 40 mL/2 ICHM 200 series or equivalent	Cool to 4°C	10 days after VTSR for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Semivolatile Organics	72	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Metals	72	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	26 days after VTSR for Hg analysis, 6 months after VTSR for analysis of others	2005 NYSDEC ASP, Method ILM 04.3, Method 7470
	Grab	Subsurface Soil	Total Petroleum Hydrocarbons	72	Glass, amber/ 150 mL/2 ICHM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	2005 NYSDEC ASP, Method 418.1

VTSR – Verified Time of Sample Receipt at the laboratory

\* Holding times based on the NYSDEC 07/05 ASP



Table 2 (continued)

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
Probe Location	Composite	Subsurface Soil	Semivolatile Organics	4	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Composite	Subsurface Soil	PCBs	4	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Composite	Subsurface Soil	RCRA Characteristics (ignitability, corrosivity, reactivity)	4	Glass, amber/ 150 mL/2 ICHM 200 series or equivalent	Cool to 4°C	26 days after VTSR for analysis	2005 NYSDEC ASP, Method 1010, 1110, Chapter 8
	Composite	Subsurface Soil	Total Petroleum Hydrocarbons	4	Glass, amber/ 150 mL/2 ICHM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	2005 NYSDEC ASP, Method 418.1
	Composite	Subsurface Soil	TCLP Extraction	4	Glass, amber/ 150 mL/2 ICHM 200 series or equivalent	Cool to 4°C	7 days after VTSR for extraction	2005 NYSDEC ASP, Method 1311
		TCLP Extract	TCLP Semivolatile Organic Compounds	4	Glass, amber/ 150 mL/2 ICHM 300 series or equivalent	Cool to 4°C	10 days after TCLP extraction for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3

Table 2 (continued)

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
		TCLP Extract	TCLP Metals	4	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	26 days after TCLP extraction for mercury analysis, 6 months after TCLP extraction for analysis of all others	2005 NYSDEC ASP, Method ILM 04.3, Method 7470

VTSR – Verified Time of Sample Receipt at the laboratory

\* Holding times based on the NYSDEC 07/05 ASP

Table 2 (continued)

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
On-Site	Grab	Surface Soil	Asbestos	4	Glass, clear/ 40 mL/2 ICHM 200 series or equivalent	N/A	N/A	Polzarized Light Microscopy (PLM) EPA 600/R 93/116

VTSR – Verified Time of Sample Receipt at the laboratory

Table 2 (continued)

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
Duplicate	Grab	Subsurface Soil	Volatile Organics	1	Glass, clear/40 mL/2 ICHM 200 series or equivalent	Cool to 4°C	10 days after VTSR for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Semivolatile Organics	4	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Metals	4	Glass, amber/ 150 mL/1 ICHM 200 series or equivalent	Cool to 4°C	26 days after VTSR for Hg analysis, 6 months after VTSR for analysis of others	2005 NYSDEC ASP, Method ILM 04.3, Method 7470
	Grab	Subsurface Soil	Total Petroleum Hydrocarbons	4	Glass, amber/ 150 mL/2 ICHM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	2005 NYSDEC ASP, Method 418.1

VTSR – Verified Time of Sample Receipt at the laboratory

\* Holding times based on the NYSDEC 7/05 ASP

Table 2 (continued)

**DOXEY'S PROPERTY  
PRE-DESIGN INVESTIGATION  
SUMMARY OF MONITORING PARAMETERS**

<u>Sample Location</u>	<u>Sample Type</u>	<u>Sample Matrix</u>	<u>Sample Fraction</u>	<u>Number of Samples</u>	<u>Container Type/Size/No.</u>	<u>Sample Preservation</u>	<u>Maximum Holding Time*</u>	<u>Analytical Method</u>
Matrix Spike and Matrix Spike Duplicate	Grab	Subsurface Soil	Volatile Organics	1	Glass, clear/ 40 mL/1 ICHEM 200 series or equivalent	Cool to 4°C	10 days after VTSR for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Semivolatile Organics	4	Glass, amber/ 150 mL/1 ICHEM 200 series or equivalent	Cool to 4°C	5 days after VTSR for extraction, 40 days after extraction for analysis	2005 NYSDEC ASP, Method OLM 04.3
	Grab	Subsurface Soil	Metals	4	Glass, amber/ 150 mL/1 ICHEM 200 series or equivalent	Cool to 4°C	26 days after VTSR for Hg analysis, 6 months after VTSR for analysis of others	2005 NYSDEC ASP, Method ILM 04.3, Method 7470
	Grab	Subsurface Soil	Total Petroleum Hydrocarbons	4	Glass, amber/ 150 mL/2 ICHEM 200 series or equivalent	Cool to 4°C	7 days after VTSR for analysis	2005 NYSDEC ASP, Method 418.1

VTSR – Verified Time of Sample Receipt at the laboratory

\* Holding times based on the NYSDEC 7/05 ASP